

Spent mushroom waste as a media replacement for peat moss in kai-lan (*Brassica oleracea* var. *Alboglabra*) production.

Abstract

Peat moss (PM) is the most widely used growing substrate for the pot culture. Due to diminishing availability and increasing price of PM, researchers are looking for viable alternatives for peat as a growth media component for potted plants. A pot study was conducted with a view to investigate the possibility of using spent mushroom waste (SMW) for Kai-lan (*Brassica oleracea* var. *Alboglabra*) production replacing peat moss (PM) in growth media. The treatments evaluated were 100% PM (control), 100% SMW, and mixtures of SMW and PM in different ratios like 1 : 1, 1 : 2, and 2 : 1 (v/v) with/without NPK amendment. The experiment was arranged in a completely randomized design with five replications per treatment. Chemical properties like pH and salinity level (EC) of SMW were within the acceptable range of crop production but, nutrient content, especially nitrogen content was not enough to provide sufficient nutrition to plant for normal growth. Only PM (100%) and SMW and PM mixture in 1 : 1 ratio with NPK amendment performed equally in terms of Kai-lan growth. This study confirms the feasibility of replacing PM by SMW up to a maximum of 50% in the growth media and suggests that NPK supplementation from inorganic sources is to ensure a higher productivity of Kai-lan.

Keyword: Spent mushroom waste; Kailan; Growth; Peat moss.